

The W80-4 Life Extension Program will ensure the effectiveness of the bomber leg of the nuclear triad when coupled with the Air Force’s Long Range Standoff Cruise Missile.

## OVERVIEW

In close coordination with the Department of Defense, NNSA is extending the life of the W80-1 warhead through the W80-4 Life Extension Program (LEP) for use in the U.S. Air Force’s (USAF) Long Range Standoff (LRSO) weapon. Together, the W80-4 and LRSO will help ensure the long-term effectiveness of the bomber leg of the Nation’s nuclear triad against more sophisticated defenses. The W80-4 LEP will also enhance the warhead’s safety, security, and reliability.

Key design requirements of the W80-4 include use of the existing insensitive high explosive design, incorporation of modern components and safety features, extensive use of non-nuclear component technology developed for other LEPs, and parallel engineering with the USAF on the warhead-missile interface.



## ACCOMPLISHMENTS AND CURRENT STATUS

NNSA completed the Weapon Design and Cost Report for the W80-4 LEP in December 2018. The Nuclear Weapons Council (NWC) approved the transition to Phase 6.3, Development Engineering, in February 2019 and the transition to Phase 6.4, Production Engineering, in March 2023. Phase 6.4 activities will mature the program to a final design and transition the warhead design into the manufacturing process. A Nuclear Explosive Safety Design Review was also completed, providing feedback to optimize nuclear safety aspects of the W80-4 design and operational concepts at the Pantex Plant. The W80-4 LEP is continuing joint flight tests with USAF LRSO program supporting the warhead design and is



## FUTURE MILESTONES

- W80-4 FPU is expected in September 2027.

## NNSA NUCLEAR SECURITY ENTERPRISE ROLES

**Lawrence Livermore National Laboratory** and **Sandia National Laboratories** are the design and engineering labs for the W80-4 LEP. In addition, Sandia is responsible for production of custom electronics, including neutron generators.

Additional production activities are performed at the following sites:

- **Kansas City National Security Campus** is responsible for producing the major non-nuclear component assemblies, including firing, safing, and use control components.
- **Los Alamos National Laboratory** is responsible for production of detonators and other classified components.
- **Pantex Plant** is responsible for producing high explosives, requalifying the W80-1 pit, and final assembly of the warhead for delivery to the USAF.
- **Savannah River Site** is responsible for testing, evaluating, and replenishing the gas transfer system.
- **Y-12 National Security Complex** is responsible for the manufacture of uranium components.



The current air-launched weapon, introduced in 1982

